

Translation

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference OZ 99605 WO-A	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP00/03391	International filing date (day/month/year) 14 April 2000 (14.04.00)	Priority date (day/month/year) 02 June 1999 (02.06.99)
International Patent Classification (IPC) or national classification and IPC C21C 5/52, 5/54		
Applicant SACHTLEBEN CHEMIE GMBH		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.  <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of <u>1</u> sheets.
3.	This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 22 December 2000 (22.12.00)	Date of completion of this report 03 July 2001 (03.07.2001)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP00/03391

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
pages 1-8, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages 1-4, filed with the letter of 10 April 2001 (10.04.2001)
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/EP 00/03391

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-4	YES
	Claims		NO
Inventive step (IS)	Claims	1-4	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-4	YES
	Claims		NO

### 2. Citations and explanations

#### 1. Prior art

D1: US-A-4 528 035.

#### 2. Novelty

D1 discloses a method as per the preamble of Claim 1, wherein the particulate solid mixture that is injected can also contain  $\text{TiO}_2$  - cf. D1, Claim 8, column 2, line 46 to column 3, line 27.

The subject matter of Claim 1 is novel.

#### 3. Inventive step

D1 does not contain any teaching as to injecting a titanium carrier, as defined in Claim 1, so as to improve the foam persistence. Consequently, the subject matter of Claim 1 is considered inventive.

Patent claims

1. Method of producing foamed slag in an arc furnace by the measured blowing of a carbon carrier by means of an oxygen carrier into the boundary layer between the slag layer and the molten metal and/or into the zones of the slag layer and/or of the molten metal that are adjacent to the boundary layer, in an amount such that the arcs are enveloped at least partially by foamed slag layer, which method is characterised in that finely divided titanium carrier is blown in.
2. Method according to claim 1, characterised in that the titanium carrier has a mean particle size  $d_{50}$  of from 0.001 to 1.0 mm and a grain size of up to 5 mm.
3. Method according to one of claims 1 and 2, characterised in that the titanium carrier has a content of titanium dioxide of from 5 to 100 %, preferably from 20 to 80 %.
4. Method according to any one of claims 1 to 3, characterised in that the titanium carrier has a content of iron oxide of up to 95 wt.%, preferably from 20 to 80 wt.%.
5. Method according to one or more of claims 1 to 4, characterised in that the titanium carrier contains one or more of the components calcium oxide, silicon oxide, aluminium oxide and magnesium oxide.
6. Method according to any one of claims 1 to 5, characterised in that the titanium carrier is introduced in admixture with the carbon carrier.

REPLACED BY  
ART 34 AND 1

7. Method according to claim 6, characterised in that the content of titanium carrier, based on the carbon content, is from 1 to 80 %.